

**Practitioner's Docket No. LAR 16307-1-SB**

**Remarks/Arguments**

The Office Action dated April 19, 2004, has been reviewed in detail and the application has been amended in the sincere effort to place the same in condition for allowance.

Applicant retains the right to pursue broader claims via a continuing application under 35 U.S.C. § 120.

**Election/Restrictions:**

In paragraphs 1 and 2 of the instant Office Action the Examiner made final a prior restriction requirement that had been traversed, and withdrew Claims 12-16 from prosecution, pursuant to 37 CFR § 1.142(b), as being drawn to a non-elected invention. In response, Applicant has cancelled these claims herein; however, Applicant reserves the right to have these claims reintroduced should the restriction requirement be withdrawn, or the right to file a divisional application thereon in accordance with 35 U.S.C. § 120 and 121.

**Informality Objections:**

In paragraph 3 of the instant Office Action the Examiner objected to Claims 1-11 due to informalities, specifically the Examiner stated:

- A. The term "improved" in the claims (1-11, line 1) is not further limiting and should be deleted. The inclusion of this term renders the claim confusing as to what is regarded as applicants' contribution. If the instant invention is an improvement in an otherwise old process, then the use of the format set forth in 37 CFR § 1.75(e) is suggested.
- B. In claim 5, line 3, "being" should be --is--.
- C. In claim 6, line 3, a comma -- , -- should be inserted after "percent".
- D. In claims 7-11, line 1, --, low-temperature oxidation-reduction-- should be inserted after "improved" for consistency with the language in claims 1-6.
- E. In claim 7, line 1, a comma -- , -- should be inserted after "claim 1".
- F. In claim 8, line 1, "for the use" should be --for use--.
- G. In claim 9, line 1, "for the use" should be --for use--.
- H. In claim 10, line 1-2, "compound is a hydrocarbon" should be --compounds are hydrocarbons--.

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I. In claim 11, line 1, "for the use" should be --for use--.

Appropriate correction is required.

In response thereto, Applicant has carefully reviewed each claim and amended each claim accordingly. In light of the above, reconsideration and withdrawal of the present objection are respectfully requested.

**Rejections Under 35 U.S.C. § 102 (e):**

In paragraph 5 of the instant Office Action the Examiner rejected Claims 1-11 under 35 U.S.C. § 102(e) as being anticipated by Bogdan et al. Specifically, the Examiner stated:

Bogdan discloses a catalytic composite consisting essentially of a combination of a refractory inorganic support with from about 0.1 to 10 mass-% on an elemental basis of a halogen component, about 0.01 to 2 mass-% on an elemental basis of a platinum component, about 0.01 to 5 mass-% on an elemental basis of a Group IVA (IUPAC 14) metal component selected from the group consisting of tin and germanium, about 0.1 to 5 mass-% on an elemental basis of an indium component and about 0.05 to 5 mass-% on an elemental basis of a lanthanide-series metal component selected from the group consisting of cerium and lanthanum (see col. 16, claim 1). Bogdan further discloses that the catalyst may also contain other components or mixtures thereof which act alone or in concert as catalyst modifiers to improve activity, selectivity or stability. Suitable and known catalyst modifiers including rhenium, cobalt, nickel, iron, tungsten, molybdenum, chromium, bismuth, antimony, zinc, cadmium, and copper. See col. 9, In 66- col. 10, In 4. Suitable refractory inorganic oxides including zirconia (see col. 4, In 17).

Bogdan discloses the claimed catalyst, thus anticipates the claims.

The claimed metal contents are met by the reference (see col. 16, claim 1).

Regarding claims 7-11, the intended use limitations in the claims are noted. However, they do not distinguish the product per se, since it is well settled that terms merely setting forth intended use for, or property inherent in, an otherwise old composition do not differentiate the claimed composition from those disclosed in the prior art. See, *In re Pearson 181*, USPQ 641. Also, "It is contrary to spirit and patent laws that patents be granted for old compositions of matter based on new uses of compositions where uses consist merely in employment of compositions; patentee is entitled to every use of which invention is susceptible, whether such use be known or unknown to him". See, *In re Thuau*, 57 USPQ 324.

The Bogdan reference discloses a catalyst developed for the catalytic reforming of gasoline-range hydrocarbons (Bogdan, column 1, lines 10-12) to increase selectivity to gasoline aromatics products (line 41-42). It is respectfully submitted that the composition of applicants' "stabilized" catalyst and the

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Bogdan "selective" catalyst are different. Unlike the present invention, it is submitted that the Bogdan reference teaches the inclusion of a halogen (or halogen compound) as a component in the Bogdan catalyst. As the applied reference states, the Bogdan invention provides:

"a novel catalyst for improved selectivity in hydrocarbon conversion.... A reforming process having improved selectivity with respect to gasoline or aromatics yields.

"The invention originates from the discovery that a catalyst containing platinum, tin, indium and cerium on chlorided alumina shows a favorable ratio of aromatization to cracking in a reforming reaction."

"A broad embodiment of the present invention is a catalyst comprising a refractory inorganic oxide, a platinum-group. (sic) metal, a Group IVA (IUPAC 14) metal, indium and a lanthanide-series metal. The atomic ration of the combination of indium and lanthanide metal to platinum-group metal preferably is at least about 1.5, more preferably at least about 2. The catalyst optimally also comprises a halogen, especially chlorine. In preferred embodiments the refractory inorganic oxide is alumina, the platinum-group metal is platinum, the Group IVA (IUPAC 14) metal is tin, and the lanthanide-series metal is cerium. A highly preferred catalyst consists of essentially of platinum, tin, indium and cerium on a halogenated alumina support." (emphasis added) (Bogdan, column 3, lines 5-26.)

The Bogdan patent has two independent claims, Claim 1 and 11. Claim 1 recites, in part:

"1. A catalytic composite having enhanced conversion of paraffins to aromatics during reforming of a naphtha feedstock consisting essentially of a combination of a refractory inorganic oxide support with from about 0.1 to 10 mass-% on an elemental basis of a halogen component...."

Similarly, Claim 11 recites:

"11. A catalytic composite comprising a combination of a halogenated alumina support with a metal component consisting essentially of about...."

Additionally, it should be noted that in both of the "Examples" set forth in the Bogdan reference which describe the preparation of a Bogdan Catalyst (i.e. Examples III and V), a halogen component was included. Additionally, each prior art catalyst and control catalyst prepared for testing in Bogdan (i.e., Examples I and II) also contained a halogen component. (Bogdan, column 14 line 27 to column 16 line 1.)

Based on the above, it is submitted that the Bogdan reference repeatedly teaches a halogen (or halogen compound) as a component in the Bogdan catalyst, and perhaps most notably Bogdan recites the inclusion of a halogen component in both of its independent claims (Claims 1 and 11).

In comparison, the applicants' amended Claim 1, now recites:

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1. A low-temperature oxidation-reduction catalyst comprising:
  - a noble metal selected from the group consisting of platinum, palladium, gold, silver and rhodium;
  - a first metal oxide which possesses more than one stable oxidation state including at least tin oxide;
  - a second metal oxide including at least zirconium oxide; and
  - wherein the catalyst does not comprise a halogen component.

It is respectfully submitted that the composition of the present invention is significantly different from the composition of the Bogdan catalyst. The Bogdan catalyst teaches and recites the inclusion of a halogen component, while the amended Claim 1 now specifically recites a catalyst that "does not comprise a halogen component." Support for this amendment can be found in the instant patent application's specification and claims, which make no mention of the inclusion of a halogen component in the inventive catalyst.

Therefore, independent Claim 1 is believed to fully distinguish from the Bogdan reference, and therefore is believed to be in condition for allowance. Since claims 2-11 all depend from independent Claim 1, they too are believed to be in condition for allowance by virtue of this dependency. Therefore, in light of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

**Prior Art of Record**

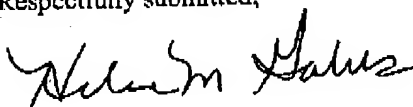
The Applicant agrees with the Examiner that the prior art made of record and not relied upon, either alone or in combination, does not defeat the patentability of the present invention.

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**CONCLUSION**

It is submitted that the Applicant has submitted a new and unique Methodology for the Efficient Stabilization of Tin-Oxide-Based Oxidation/Reduction Catalysts. In view of the above, it is submitted that Claims 1-11 are in condition for allowance. Therefore, it is requested that a Notice of Allowance be issued at an early date.

Respectfully submitted,



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